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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,333	07/08/2003	Walter M. Weber	MASIMO.305A	8742

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EXAMINER	
KREMER, MATTHEW J	

ART UNIT	PAPER NUMBER
3736	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/615,333	WEBER ET AL.	
	Examiner	Art Unit	
	Matthew J. Kremer	3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13-17* is/are allowed.

6)☒ Claim(s) *1-3,10-12,18 and 19* is/are rejected.

7)☒ Claim(s) *4-9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/10/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S> Patent 5,995,858 to Kinast. In regard to claim 18, Kinast teaches a means for applying a first demodulation signal in the form of a first phase-sensitive demodulator and a means for adjusting a phase of said demodulation signal in the form of error correction means for correcting for residual phase errors. (claim 3 of Kinast). In regard to claim 19, Kinast teaches a means for applying a second demodulation signal in the form of a second phase-sensitive demodulator and a means for adjusting a phase of said demodulation signal in the form of error correction means for correcting for residual phase errors. (claim 3 of Kinast).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,919,134 to Diab. Diab teaches a method and an apparatus measure blood oxygenation in a subject that includes:

(1) a first signal source applying a first input signal during a first time interval;

(2) a second signal source applying a second input signal during a second time interval;

(3) a detector detecting a first parametric signal responsive to the first input signal passing through a portion of the subject having blood therein and detecting a second parametric signal responsive to the second input signal passing through the portion of the subject, the detector generating a detector output signal responsive to the first and second parametric signals; and

(4) a signal processor which receives the detector output signal, the signal processor demodulating the detector output signal by applying a first demodulation signal to a signal responsive to the detector output signal to generate a first output (which is considered the first demodulator output signal) and applying a second demodulation signal to the signal responsive to the detector output signal to generate a second output signal (which is considered a second demodulator output signal), the first demodulation signal and the second demodulation signal both include at least a first component having a first frequency (both signals have the same frequency) and a first amplitude. (Abstract of Diab). Note that even though, the first amplitude of the second demodulation signal and the first amplitude of the first demodulation signal are equal, the first amplitude of the second demodulation signal of Diab is considered the second

amplitude of the second demodulation signal of the present invention since they are distinct (though equal) amplitudes. Diab further teaches that a second amplitude from the first and second demodulation signals of Diab is related to the first amplitude to minimize crosstalk from the first parametric signal to the second output signal and to minimize crosstalk from the second parametric signal to the first output signal. This teaching means that the amplitudes of the first and second demodulation signals of Diab (which is considered to the first amplitude of the first demodulation signal and second amplitude of the second demodulation of the present invention) are chosen to reduce crosstalk from the first parametric signal to the second demodulator output signal and to reduce crosstalk from the second parametric signal to the first demodulator output signal since they are related to the second amplitude of the second component of the first and second demodulation signals.

Finally, Diab teaches that the first component of the second demodulation signal is in a selected phase relationship with the first component of the first demodulation signal, which implies that the first components of the first and second demodulation signal have phases.

It is noted that Diab does not explicitly teach that at least one of the first phase, second phase, first amplitude, and second amplitude is chosen using, in part, data obtained from the detector during calibration of the apparatus. However, Diab teaches that parameters are chosen to minimize crosstalk and such a teaching indicates that during calibration, development, and testing of the apparatus, measured data was obtained so that the operating parameters are selected that would minimize crosstalk.

Such procedures are known methods of optimizing any measuring apparatus. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain measured data during calibration, development, and testing of the apparatus to select the operating parameters of the invention of Diab since such procedures are used to optimize any apparatus.

In regard to claim 3, Diab teaches a method of minimizing crosstalk between two signals generated by applying a first pulse and a second pulse to measure a parameter. The first pulse and the second pulse are applied periodically at a first repetition rate defining a period. The first pulse is generated during a first interval in each period, and the second pulse is generated during a second interval in each period. The first and second parametric signals are received by a single detector, which outputs a composite signal responsive to the first and second parametric signals. The method comprises the step of applying a first demodulation signal to the composite signal to generate a first demodulated output signal wherein the first demodulation signal comprises at least a first component having a first frequency corresponding to the first repetition rate and a first amplitude. The method further includes the step of applying a second demodulation signal to the composite signal to generate a second demodulated output signal. The second demodulation signal comprises the first component at the first frequency and the first amplitude and further comprises the second component at the second frequency and the second amplitude. The method further includes the steps of lowpass filtering the first demodulated output signal to generate a first recovered output signal responsive to the first parametric signal; and lowpass filtering the second

demodulated output signal to generate a second recovered output signal responsive to the second parametric signal. The phases of the components of the first and second demodulation signals are chosen since at least one of the first and second components of the second demodulation signal has a selected phase difference with respect to the corresponding one of the first and second components of the first demodulation signal. (column 2, line 61 to column 3, line 31 of Diab). Diab further teaches that the selection of the first demodulating signal (its amplitudes and frequency) and the second demodulating signal (its amplitudes and frequency) substantially reduces or eliminates the effects of noise in the two output signals and also substantially reduces or eliminates crosstalk between the two filtered signals.

It is noted that Diab does not explicitly teach that at least one of the first phase, second phase, first amplitude, and second amplitude is chosen using, in part, data obtained from the detector during calibration of the apparatus. However, Diab teaches that parameters are chosen to minimize crosstalk and such a teaching indicates that during calibration, development, and testing of the apparatus, measured data was obtained so that the operating parameters are selected that would minimize crosstalk. Such procedures are known methods of optimizing any measuring apparatus. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain measured data during calibration, development, and testing of the apparatus to select the operating parameters of the invention of Diab since such procedures are used to optimize any apparatus.

In regard to claims 10-12, Diab teaches that the second amplitude of the demodulated signal is related to the first amplitude of the demodulated signal to minimize crosstalk from the first parametric signal to the second output signal, which means these parameters were adjusted during calibration, development, and testing so that the optimized parameters could be selected. (Abstract of Diab). In regard to claim 11, a second demodulated signal is disclosed. (Abstract of Diab).

Allowable Subject Matter

5. Claims 4-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claim 13-17 are allowed.

Response to Arguments

7. Applicant's arguments filed 4/26/2005 have been fully considered but they are not persuasive. In regard to claim 18, the Applicant merely asserted that Kinast does not teach the limitations of claim 18 without providing any explanation for this assertion. The Examiner respectfully disagrees. Kinast teaches a means for applying a first demodulation signal in the form of a first phase-sensitive demodulator and a means for adjusting a phase of said demodulation signal in the form of error correction means for correcting for residual phase errors. (claim 3 of Kinast). In regard to claim 19, the

Applicant merely asserted that Kinast does not teach the limitations of claim 19 without providing any explanation for this assertion. The Examiner respectfully disagrees. Kinast teaches a means for applying a second demodulation signal in the form of a second phase-sensitive demodulator and a means for adjusting a phase of said demodulation signal in the form of error correction means for correcting for residual phase errors. (claim 3 of Kinast).

8. Applicant's arguments with respect to claims 1-3 and 10-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Kremer whose telephone number is 571-272-4727. The examiner can normally be reached on Mon. through Fri. between 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ERIC F. WINAKUR
PRIMARY EXAMINER